"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOKHODZHAYEV, I.Ya.

Two-stage patient care in the Republic Clinical Hospital.
Zdrav.Tadzh. 6 no.4:3-5 Jl-Ag '59. (MIRA 12:11)

1. Glavnyy vrach Respublikanskoy klinicheskoy bol'nitsy, g.Stalinabad.
(STALINABAD--MEDICAL CARE)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOKHODZHAYEV, I.Ya.

Primary cancer of the liver. Trudy Inst. kraev. med. AN Tadzh. SSR no.1:271-279 '62. (MIRA 17:5)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOKHODZHAYEV, I. Ya.

Evaluation of the organizational expediency of medical care for the urban population by means of medical centers located directly in the residential sections. Zdrav. Ros. Feder. 7 no.8:17-21 Ag'63. (MIRA 16:10)

1. Otdel organizatsii zdravookhraneniya Moskovskogo nauchno-issledovatel'skogo instituta gigiyeny imeni F.F.Erismana (dir. A.P.Shitskova).

(MEDICAL CENTERS)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOKHODZHAYEV, I.Ya., kand. med. nauk; BURMISTROVA, N.F.; RZHEVSKAYA, A.Ya.

Economic evaluation of the care of patients by the "hospital in the home" method. Zdrav. Ros. Feder. 7 no.9:6-12 S '63. (MIRA 16:10)

1. Otdel organizatsii zdravookhraneniya (rukovoditel'- doktor med. nauk I.D. Bogatyrev) Moskovskogo nauchno-issledovatel'skogo instituta gigiyeny imeni F.F. Erismana (dir. A.P. Shitskova).

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BRAGINSKIY, M.B.; BOBOKHODZHAYEV, I.Ya.; YANKOVSKIY, A.V.

Duration of the course of hemocytoblastosis. Zdrav. Tadzh. 10 no.3:13-16 '63. (MIRA 17:4)

1. Iz kafedry fakul'tetskoy terapii (zav. - doktor med. nauk K.A. Khasanova) i patologicheskoy anatomii meditsinskogo instituta imeni Abuali ibn-Sino.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BRAGINSKIY, B.M., dotsent; BOBOKHODZHAYEV, I.Ya., kand. med. nauk

Hepatolienal syndrome in heliotrope toxicosis. Sov. med. 28 no.9: 57-60 S '65. (MIRA 18:9)

1. Kafedra fakul'tetskoy terapii (zav. - doktor med. nauk K.A. Khasanova) Tadzhikskogo meditsinskogo instituta imeni Ibn-Siny.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOTOKHODCHAYEV, M. Kh. --

Clinical and Electrocardiographic Changes in Hypertonic Disease." Cand Med Sci, Second Moscow Medical Inst imeni I. V. Stalin, Moscow, 1954. (IR, 22 Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOKHODZHAYEVA, M.Ya., ordinator.

On the problem of ophtalmomyiasis coused by the nose flies in Tajikistan. Trudy AN Tadzh. SSR 40:147-151 '55. (MIRA 9:10)

1. Iz kafedry glaznykh bolezney (zav. - prof. L.F. Paradoksov; deceased) Stalinabadskogo gosudarstvennogo meditsinskogo instituta imeni Abuali ibn-Sino (dir.- chl. -korr. Akademii nauk Tadzhikskoy SSR Ya.A. Rakhimov).

(TAJIKISTAN--EYE--DISEASES AND DEFECTS) (BOTFLIES)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

ACCESSION NR: AP4037240 S/0062/64/000/005/0826/0831

AUTHOR: Norikov, Yu. D.; Bobolev, A. V.; Blyumberg, E. A.

TITLE: Effect of the surface on the chain continuation mechanism in gas phase oxidation of n-butane.

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no. 5, 1964, 826-831

TOPIC TAGS: normal butane oxidation, gas phase oxidation, mechanism, kinetics, secondary butyl peroxide radical, isomerization, reactor surface, reactor surface catalytic action, chain continuation

ABSTRACT: The kinetics of the gas phase oxidation of n-butane in stainless steel and in quartz reactor washed with KCl solution (forming a KCl layer of 5.5 mg/cm^2) were studied. The oxidation was conducted at 550 mm Hg, 260C, with a butane:O ratio of 2:1. The rate of the decompcaition of the secondary butyl peroxide radical by the three courses was compared:

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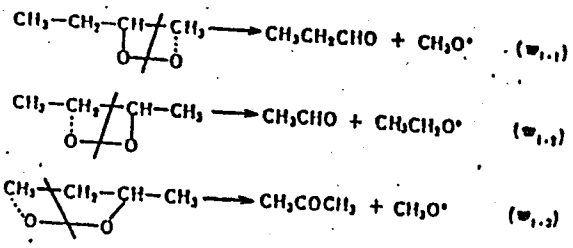
"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

ACCESSION NR: AP4037240



These reactions depend strongly on the nature of the reactor surface: the reaction is many times slower in the matal reactor; 3 times as much acetone is formed in the metal or in the KCl-coated reactor as in a quartz reactor; no propionaldehyde is formed in the stainless steel reactor; and the reaction rate in the stainless reactor used for 150 hours is much faster than in the fresh metal reactor. The differences in the ratios of the 3 possible RO_2 decomposition rates are attributed to the specific catalytic action of the different reactor surfaces on the isomerization of the peroxide radical. The stainless steel and the KCl layer on quartz promote RO_2 radical isomerization with transition of the free valence from the oxygen atom to the beta-carbon atom and subsequent decomposition

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ACCESSION NR: AP4037240

of the radical to form acetone (70% of the radicals proceed via this route; no propionaldehyde was formed). Quartz promotes isomerization with transfer of valency to one of the alpha-carbon atoms to form acetaldehyde and propionaldehyde (only 20% of the radicals form acetone). Orig. art. has: 1 table, 3 figures and 5 equations.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR)

SUBMITTED: 13Sep63

SUB CODE: OC ENCL: 00

NO REF SOV: 010 OTHER: 002

Card 3/3

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

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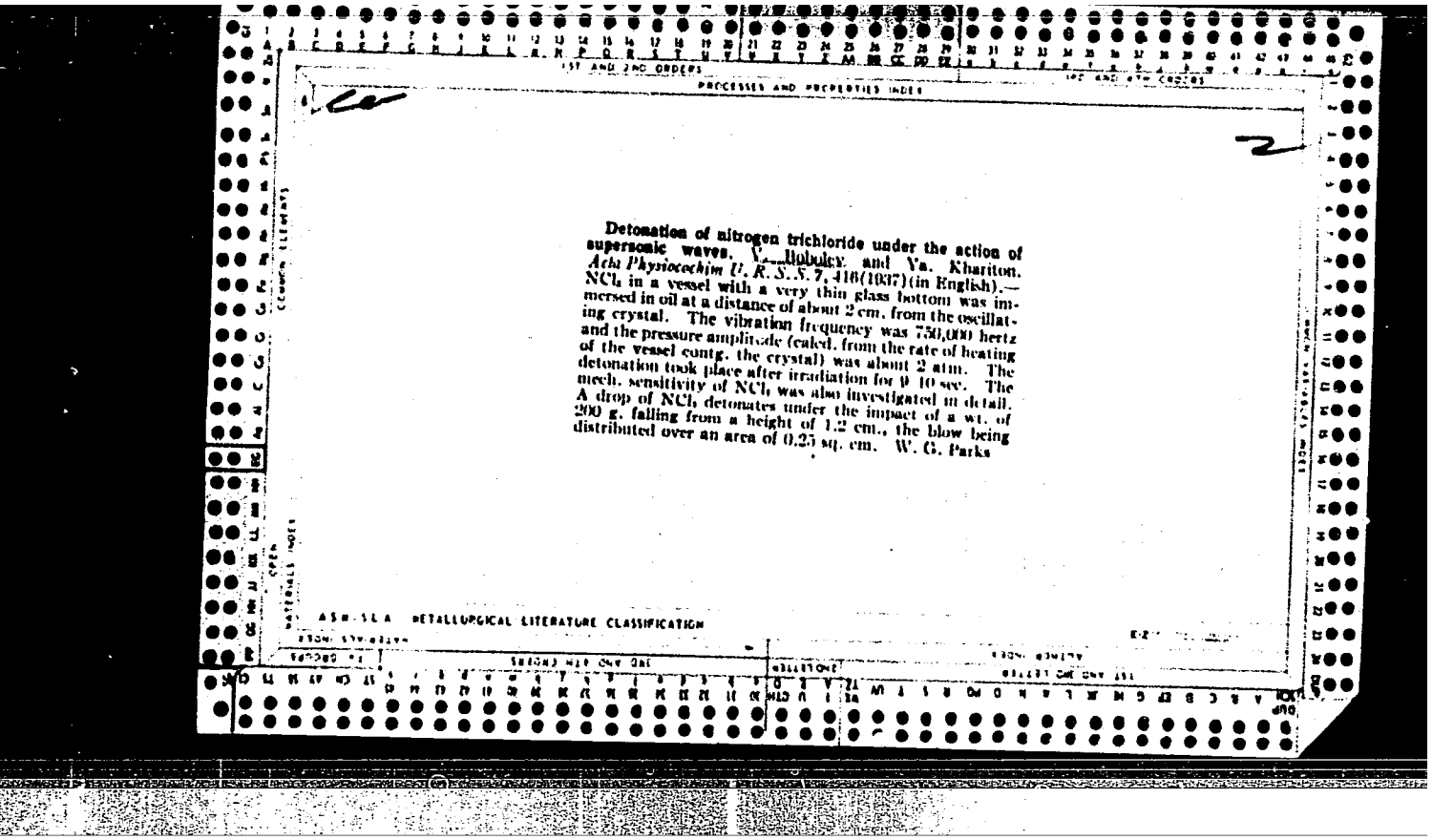

Detonation of nitrogen trichloride under the action of supersonic waves. V. Obolov and Ya. Khariton. *Acta Physicochim U. R. S. S.* 7, 416(1937)(in English).—NCl_3 in a vessel with a very thin glass bottom was immersed in oil at a distance of about 2 cm. from the oscillating crystal. The vibration frequency was 750,000 hertz and the pressure amplitude (calcd. from the rate of heating of the vessel contg. the crystal) was about 2 atm. The detonation took place after irradiation for 9 10 sec. The mech. sensitivity of NCl_3 was also investigated in detail. A drop of NCl_3 detonates under the impact of a wt. of 200 g. falling from a height of 1.2 cm., the blow being distributed over an area of 0.25 sq. cm. W. G. Parks

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

Mutarotation of glucose under pressure. V. K. Bobolev and O. I. Leipunski (*J. Phys. Chem. Russ.*, 1941, **15**, 1104—1107).—The velocity coeff. of mutarotation of α-glucose at 25° increases with pressure, p, 15-fold when p rises from 1 to 10,000 atm. The energy of activation is slightly reduced by pressure. J. J. B.

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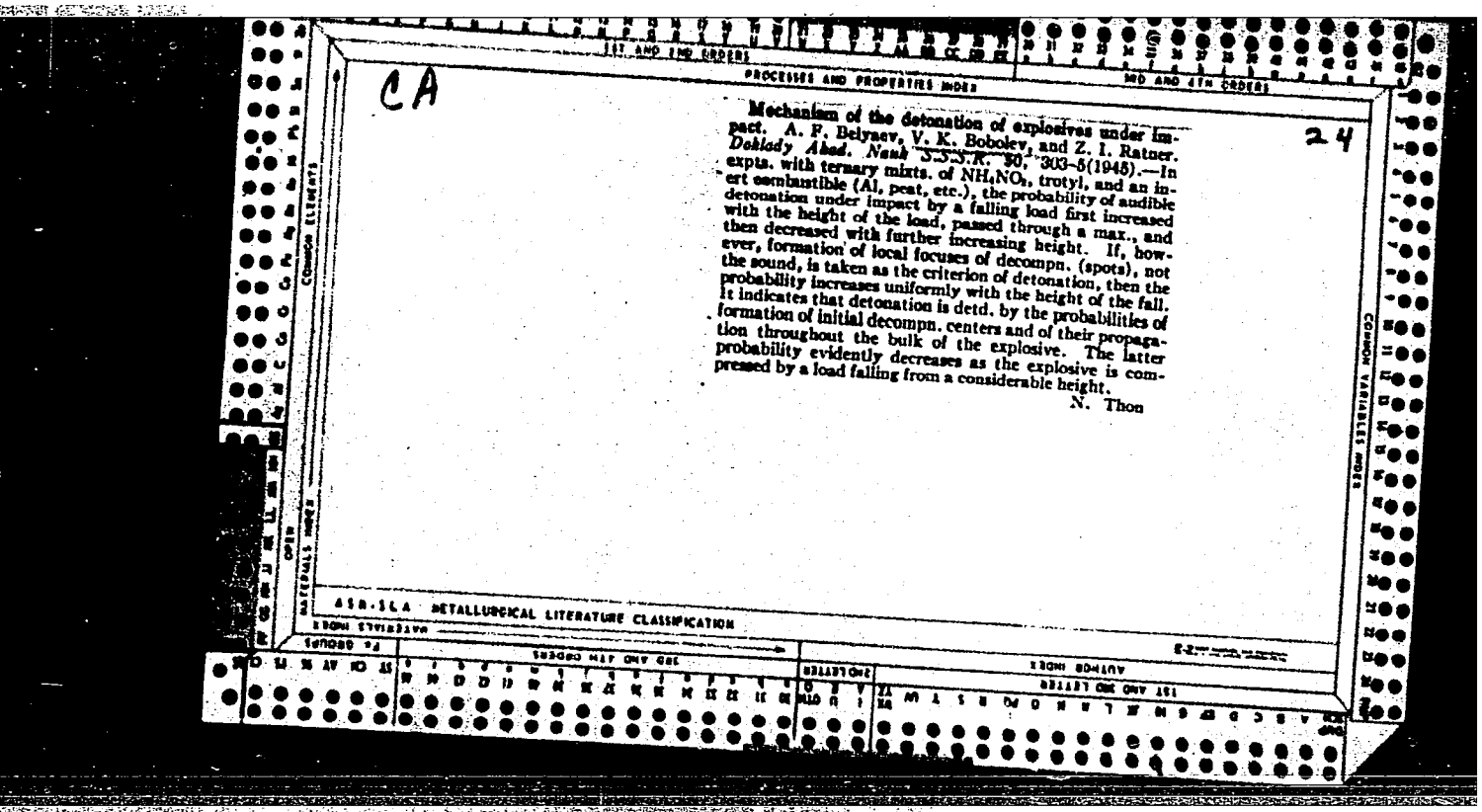

CA

24

Mechanism of the detonation of explosives under impact. A. F. Belyaev, V. K. Bobolev, and Z. I. Ratner. *Doklady Akad. Nauk S.S.S.R.* 50, 303–5(1945).—In expts. with ternary mixts. of NH_4NO_3, trotyl, and an inert combustible (Al, peat, etc.), the probability of audible detonation under impact by a falling load first increased with the height of the load, passed through a max., and then decreased with further increasing height. If, however, formation of local focuses of decompn. (spots), not the sound, is taken as the criterion of detonation, then the probability increases uniformly with the height of the fall. It indicates that detonation is detd. by the probabilities of formation of initial decompn. centers and of their propagation throughout the bulk of the explosive. The latter probability evidently decreases as the explosive is compressed by a load falling from a considerable height.

N. Thon

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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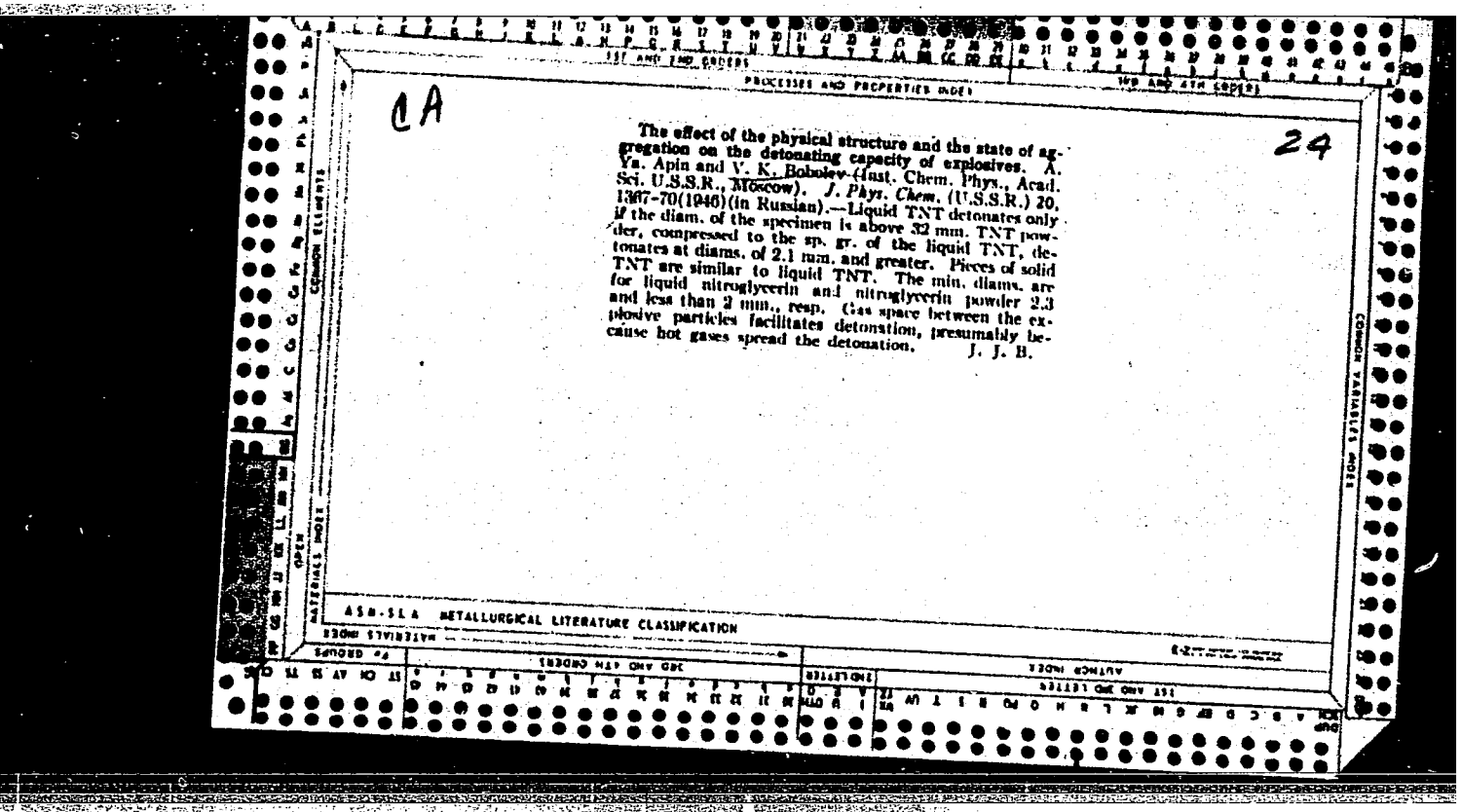

CA

24

The effect of the physical structure and the state of aggregation on the detonating capacity of explosives. A. Ya. Apin and V. K. Bobolev (Inst. Chem. Phys., Acad. Sci. U.S.S.R., Moscow). *J. Phys. Chem.* (U.S.S.R.) 20, 1367–70(1946)(in Russian).—Liquid TNT detonates only if the diam. of the specimen is above 32 mm. TNT powder, compressed to the sp. gr. of the liquid TNT, detonates at diams. of 2.1 mm. and greater. Pieces of solid TNT are similar to liquid TNT. The min. diams. are for liquid nitroglycerin and nitroglycerin powder 2.3 and less than 2 mm., resp. Gas space between the explosive particles facilitates detonation, presumably because hot gases spread the detonation. J. J. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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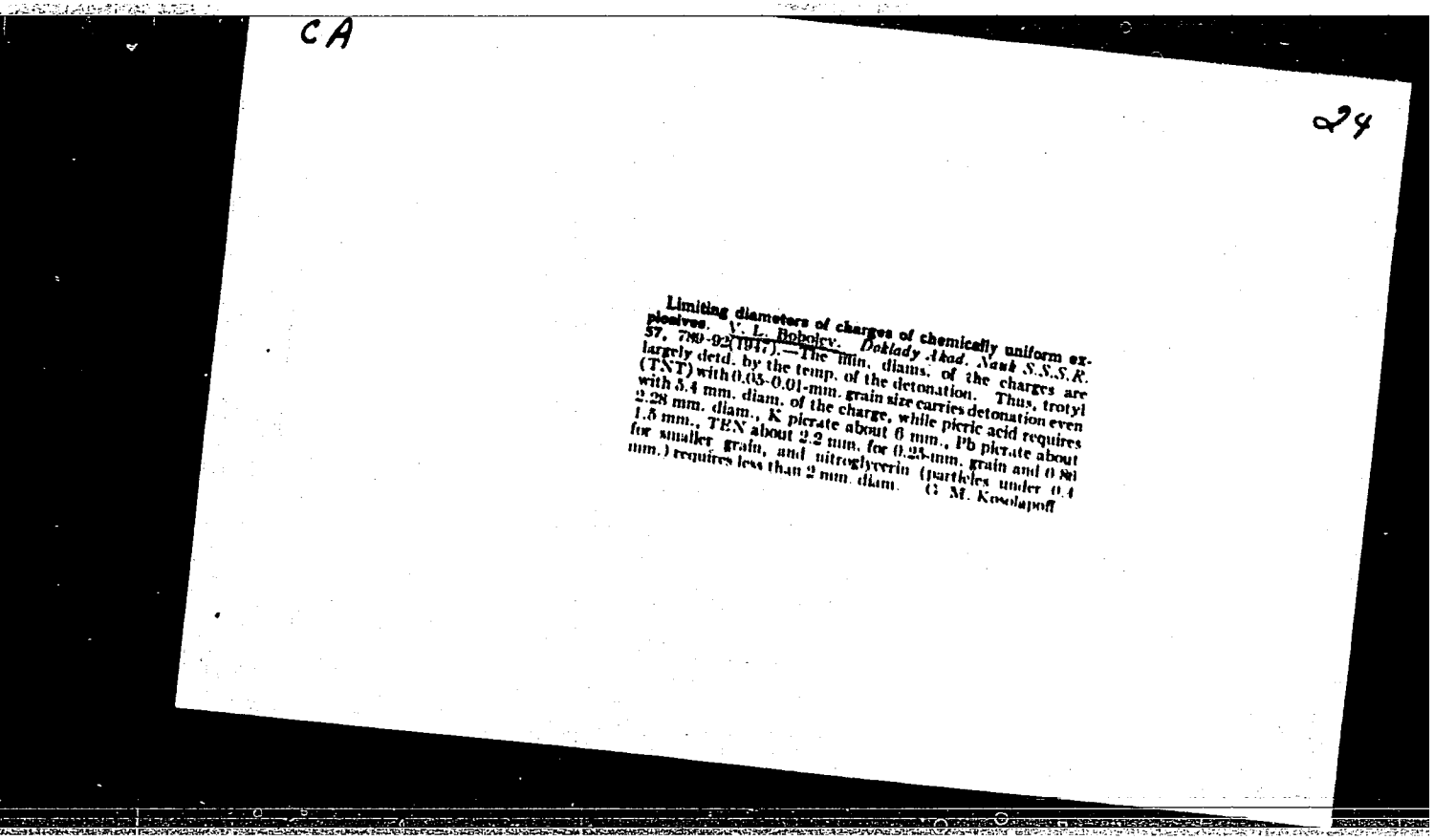

CA

29

Limiting diameters of charges of chemically uniform explosives. V. L. Bobolev. *Doklady Akad. Nauk S.S.S.R.* 57, 789-92(1947).—The limit. diams. of the charges are largely detd. by the temp. of the detonation. Thus, trotyl (TNT) with 0.05-0.01-mm. grain size carries detonation even with 5.4 mm. diam. of the charge, while picric acid requires 2.28 mm. diam., K picrate about 6 mm., Pb picrate about 1.5 mm., TEN about 2.2 mm. for 0.25-mm. grain and 0.8 mm. for smaller grain, and nitroglycerin (particles under 0.4 mm.) requires less than 2 mm. diam. G. M. Kosolapoff

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BOBOLEV V. K.

USSR/Physics
Powders, Explosive
Detonation - Effects

"Nature of Damping the Detonation in Powdered Explosives," A. Ya. Apin, V. K. Boblev, Inst Phys Chem, Acad Sci USSR, 3½ pp

"Dok Adad Nauk SSSR, Nova Ser" Vol LVIII, No 2

S. Ratner and Yu. Khariton were able to determine with the aid of photographs that explosions of nitroglycerine or nitroglycol enclosed in glass tube of small diameter, start off very rapidly, but slow up and eventually die out altogether. Authors report results of experiments they conducted to determine if this phenomenon of damping exists only in the case of liquid explosives or if also present for powdered explosives. Submitted by Academician N. N. Semeno 21 March 1947.

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S/062/60/000/04/05/006
B004/B066

2.1000

AUTHORS: Bobolev, V. K., Bolkhovitinov, L. G.

TITLE: On the Temperature of the Initial Heating Centers When the Explosion Is Initiated by a Stroke

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 4, pp. 754 - 755

TEXT: The authors proceed from the assumption that the crystals of an explosive are plastically deformed and melt in an explosion initiated by a stroke. At this stage, equations (1) and (2) hold for pressure and velocity of flow. These equations contain the falling speed of the weight, the viscosity coefficient of the partially molten explosive, the thickness of the explosive layer, and the axes of a cylindrical coordinate system. Equation (3) is written down for heating the volume l^3 of the explosive, considering the evolution of heat by viscous forces. Therefrom an equation is derived for T and for the critical temperature T_* which is attained at a falling speed u_* and a pressure P_*. This

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

On the Temperature of the Initial Heating Centers When the Explosion Is Initiated by a Stroke

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B004/B066

corresponds to a melting-point depression to T_* within the time τ_* (Equation 4). The unknown viscosity coefficient is eliminated from this equation, and equation (6) results. This includes the constant a which is about 0.02°C/atm for all explosives. Experiments were carried out with Ten, Hexogen, and Octogen. The time between stroke and explosion was measured on an OK-17M (OK-17M) oscilloscope. Data are given in Table 1. The values calculated for T_* agree with the experimental and theoretical data obtained by other scientists (Refs. 5, 6). There are 1 table and 7 references: 6 Soviet and 1 British.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR)

SUBMITTED: July 31, 1959

Card 2/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

S/020/61/136/003/020/027
B004/B056

11.8300

AUTHORS: Afanas'yev, G. T., Bobolev, V. K., and Bolkhovitinov, L. G.

TITLE: The Theory of an Explosion Released by Impact

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol.136, No. 3, pp. 642-643

TEXT: The problem as to the conditions under which the explosion of an explosive is released by impact is studied in theory. The authors proceed from the assumption that the course of the impact explosion is a plastic deformation of the substance accompanied by the formation of centers with critical temperature. According to experiments made by V. R. Regel' and G. V. Berezhkova as well as by L. M. Kachanov, the stress at which plastic deformation occurs, depends on the factor α, and the ratio between the height and the diameter of the specimen. According to Refs. 4 and 5, $P = \sigma_s/3\sqrt{3\alpha}$ (1) is therefore written down as the first condition. P is the pressure necessary to release the explosion, σ_s - the flow limit of the substance. On the other hand, also the criterion by D. A. Frank-Kamenetskiy must be satis-

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

89734

The Theory of an Explosion Released by Impact

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B004/B056

fied: $[d^2QEz \exp(-E/RT)]/4\kappa RT^2 = \delta$. Q is the thermal effect of the reaction per unit volume; E - the activation energy; κ - the coefficient of thermal conductivity; $\delta = 3.32$ in the case of a spherical center of explosion; d = diameter. If the temperature D is higher than the melting temperature T_m of the substance, it is necessary, according to Ref. 7, that the heating be accompanied by universal compression: $P = (T - T_m)\chi/\chi$. χ is the increase of the melting point per atmosphere. On the assumption that the extent of the heating center equals the height of the specimen to be compressed, the following second condition is written down: $\left\{(\alpha D)^2 QEz \exp\left[-E/R(T_m + \chi P)\right]\right\}/4\kappa R (T_m + \chi P)^2 = \delta$ (2). D is the diameter of the specimen. The conditions for the impact explosion are discussed for $T_{expl} < T_m$ and $T_{expl} > T_m$. In the former case, the condition (1) suffices to release an explosion. Since the factor α changes during deformation, a graphical solution is given for an ideal plastic body at $T_{expl} > T_m$. Curve I in Fig. 1 represents the condition (1) as $P = f(\alpha)$, curve II shows condition (2). The latter is satisfied only

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The Theory of an Explosion Released by Impact

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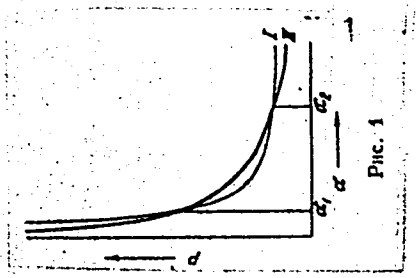
B004/B056

with $\alpha \leqslant \alpha_1$ and $\alpha \geqslant \alpha_2$. Only within this region hot centers leading to explosion can be formed. There are 1 figure and 7 references: 6 Soviet and 1 British.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: July 30, 1960 by V. N. Kondrat'yev, Academician

SUBMITTED: July 28, 1960



Фиг. 1

Card 3/3

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20645

S/020/61/136/006/022/024
B103/B203

11.8300

AUTHORS: Afanas'yev, G. T., Bobolev, V. K., and Bolkhovitinov, L. G.

TITLE: Estimation of the sensitivity of explosives

PERIODICAL: Doklady Akademii nauk SSSR, v. 136, no. 6, 1961, 1396-1398

TEXT: The authors worked out a comprehensive criterion for the sensitivity of explosives considering the chemical, mechanical, and thermodynamic properties of these substances. It also reflects the conditions of mechanical action. Such a criterion has not yet been established in publications (Ref. 1; N. A. Kholevo, Ref. 2). The authors proceed from the theory of heat explosion (tepovoy vzryv) and from the theorem of the role of pressure in the initiation of explosion by impact. To attain, in the zone of plastic deformation, the temperature T which exceeds the melting temperature of the substance (T_{fus}), a pressure P must be applied: $P = (T - T_{fus})/\alpha$ (1), where α is the increase of the melting point by 1 atm (mostly, α is assumed to be 0.02 deg/atm). The extent of the zone of the

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

Estimation of the sensitivity of...

temperature T, in which no steady chemical reaction can take place, is determined on the basis of the theory of heat explosion. To subject a zone of the extent l to thermal self-ignition, l must be larger than l_{cr}, l_{cr} being calculated from A. A. Frank-Kamenetskiy's formula.

$l_{cr}^2 QEz \exp(-E/RT)/4\varkappa RT^2 = \delta$ (2), where Q - the heat effect of the reaction per unit volume, E - activation energy, z - a factor, $\varkappa$ - coefficient of heat conductivity, and $\delta = 3.32$ for a spherical center at the boundary of which the temperature T is maintained. The value l_{cr} determined from (1) and (2) shows that at a pressure P the effective center can only be larger, by no means smaller than l_{cr}. Consequently, l_{cr} is the critical dimension of the initiation at a pressure P. When an explosive specimen is equalized to an ideal plastic body deformed so as to have no scale effect, the heating temperature is, due to plastic deformation, limited by a pressure proportional to the yield point σ_s of the explosive.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

This temperature is approximately equal to $T = T_{fus} + \frac{1}{3}\alpha\sigma_s$ (3). Thus, the dimension of the zone of plastic deformation, in which a steady reaction at the temperature T is impossible, only depends on the properties of the explosive. Therefore, this dimension may serve as a quantitative characteristic of the sensitivity of an explosive in the same way as the critical diameter of detonation may serve to estimate the detonating capacity of an explosive. The authors think it possible to establish a uniform order of sensitivity of explosives from this dimension which is calculated by substituting (3) in (2). They call this dimension the critical dimension of a substance. On the other hand, the pressure resulting in an explosive charge under mechanical action generally depends on the geometry of the charge. Thus, the scale effect strongly influences small specimens. Therefore, the authors suggest a further definition of l_{cr}: critical dimension of the initiation of charge. It depends both on the mechanical properties of the explosive and on the conditions of the action. This dimension reflects the relative sensitivity of explosives to mechanical action. The authors determined this l_{cr} for Ten, hexogen, tetryl, and trotyl on a ram

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impact machine (koprovoye ispytaniye) (Table 1). Apparatus no. 2 of N. A. Kholevo (Ref. 2) was used for this purpose. Pressure was determined tensometrically. The values z and E were found by A. I. Serbinov. The authors state that the knowledge of l_{cr} permits, in many cases, a rapid and correct estimation of the probability of an explosion on the basis of test conditions. According to Ya. I. Leytman, the degree of fine distribution of an explosive has no effect on its sensitivity to impact. The authors, however, state that Leytman's conclusion only holds if the explosive particles are smaller than l_{cr}. Up to this point, the conditions of release of an explosion are not affected by the increase in size of particles. In conclusion, the authors state that the use of l_{cr} permits a simple and natural explanation of test results on ram impact machines. l_{or} expresses the possibility of formation of an effective center, which corresponds to the idea of the sensitivity being a "readiness for decomposition". There are 2 figures, 1 table, and 8 references: 6 Soviet-bloc and 1 non-Soviet-bloc.

Card 4/5

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

20645

Estimation of the sensitivity of... S/020/61/136/006/022/024
B103/B203

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: July 30, 1960, by V. I. Kondrat'yev, Academician

SUBMITTED: July 28, 1960

Explosive	E, kcal	H_o, cm	P, kg/cm^2	l_{or}, cm
Ten	34	5	5000	$5 \cdot 10^{-3}$
Hexogen	37	5	5500	$7 \cdot 10^{-3}$
Tetryl	35	17	4900	$4 \cdot 10^{-2}$
Trotyl	48	40	7400	$2 \cdot 10^{-2}$

Table 1

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

24062
S/020/61/138/004/023/023
B103/B203

11.8300

AUTHORS: Afanas'yev, G. T. and Bobolev, V. K.

TITLE: Phlegmatizing of explosives

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 4, 1961, 886 - 889

TEXT: The authors made experiments to clarify the phlegmatizing action of plasticizers in explosives. By artificial reduction of their sensitivity to mechanical influences it is possible to extend their applicability. The authors compared the behavior of pure hexogen with that of hexogen with 6% ceresin in impact. They used an impact machine with free discharge of the substance (suggested by Kholevo [Abstracter's note: machine not stated]). On the basis of an analysis of the results, the authors divide the process of impact compression in two sections: (1) the substance is deformed at pressures characteristic of the explosive and the thickness (h) of the changing layer; (2) the residual layer is elastically compressed to a pressure determined by the initial momentum of the load and by its fraction lost in the deformation of the substance. The processes of the first section can be represented by $\sigma = f(\varepsilon)$ diagrams ($\varepsilon = \Delta h/h_o$; h_o = initial thickness of the

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B103/B203

Phlegmatizing of explosives

specimen). The specimen is destroyed, and the pressure drops at the same time. Corresponding to the pressure drop, part of the substance is flung out of the pressure area during the destruction. The authors studied trotyl, tetryl, ten, ammonium perchlorate, pure chalk, chalk with different amounts of paraffin, gunpowder H (N), lead, hexogen of 1 - 10μ dispersity, and hexogen with the density of the single crystal. They suppose three destruction mechanisms: (1) loss of the stability of the friable medium; (2) rapid drop in viscosity; and (3) destruction of the whole specimen as a crystalline body. Since the destruction only occurs with trotyl, tetryl, ten, the two types of hexogen, ammonium perchlorate, and hexogen with phlegmatizer, and the destruction pressure is the higher, the higher the strength of the explosive, the authors assume mechanism (3). They calculate the temperature change due to the heat conductivity during the deformation time τ (mostly 500 - 600μ sec maximum), and conclude that the process of impact compression may be regarded to be adiabatic. The temperature in the layer rises with advancing deformation; on the other hand, compression strength and yield point drop with rising temperature. At the same time, the reduction of h/d (d being the diameter of the roller of the testing apparatus) leads to an increase in compression strength and yield point of the specimen. The $\sigma = f(\varepsilon)$ diagrams

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Phlegmatizing of explosives...

reflect the action of these two influences. The authors choose the destruction pressure P as the best marked limit in the diagrams and oscillograms. Fig. 2 shows the values of the destruction pressure as a function of h/d. Hence, the authors conclude that the phlegmatizer reduces the carrying capacity of the specimen. With the development of deformation, the picture changes rapidly due to the temperature increase of the specimen. Phlegmatized hexogen is more dependent on the scale, and becomes more solid than hexogen in the case of h/d = 0.017. The authors explain the difference in sensitivity of hexogen from phlegmatized hexogen with the fact that in the latter the whole energy absorbed by the specimen is mainly generated in the interlayers of the plasticizer. If the isothermal curve of the scale effect and the temperature dependence of the compression strength are known, it is possible to determine the average temperature of the explosive both with and without phlegmatizer with the aid of the function P = P(h/d) constructed on the basis of dynamic tests. The authors recommend the determination of I = P(h/d) as a method of studying the efficiency of phlegmatizing by means of a plasticizer. A comparison of the P = P(h/d) curves permits the choice of a corresponding amount of a certain plasticizing combination for every dispersity. Most efficient are phlegmatizers whose heat conductivity is

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Phlegmatizing of explosives...

much higher than that of the explosive. Finally, the authors discuss phlegmatizing in connection with the critical dimension of initiation (G. T. Afanas'yev, V. K. Bobolev, L. G. Bolkhovitinov, (Ref 4: DAN, 136, No. 6 (1961)). They state that the dispersity of a plasticizer for explosives which only explode under the condition of critical stresses (G. T. Afanas'yev, V. K. Bobolev, L. G. Bolkhovitinov, DAN, 136, No. 3 (1961) must be lower than the critical dimension of initiation of the charge. Therefore, a plasticizer must be well adsorbable to the small crystals of the explosive in order to isolate them properly. If an uneconomical amount of phlegmatizer should be required, preliminary phlegmatizing must be carried out by the following methods: lowering of the melting point and strength properties of substances and products. An explosive whose flash point is lower than its melting point (lead azcimide) can be made more sensitive by plasticizers. Here, phlegmatizing can be attained by weakening the crystal lattice. The authors thank L. G. Bolkhovitinov and I. A. Karpukhin for discussing the above-mentioned problems. There are 3 figures and 6 Soviet-bloc references.

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24062

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B103/B203

Phlegmatizing of explosives

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: December 28, 1960 by V. N. Kondrat'yev, Academician

SUBMITTED: December 28, 1960

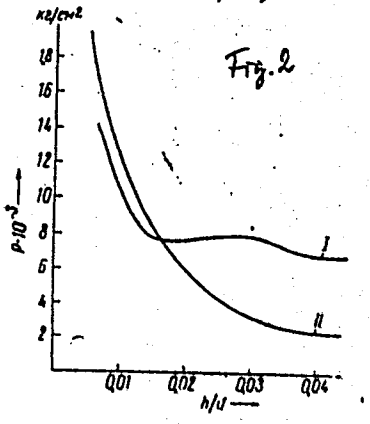

Fig. 2

Fig. 2: Destruction pressure as a function of h/d.
Legend: (I) hexogen, (II) hexogen with phlegmatizer.

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L 17448-63 EPA/EPR/ECF(c)/EWT(m)/BDS AFFTC/APGC Pas-4/Ps-4/Pr-4
BW/RM/WW/JW/DE/JWD/H
ACCESSION NR: AP3006130 S/0207/63/000/004/0099/0101

82
78

AUTHOR: Bobolev, V. K. (Moscow); Chekirda, L. F. (Moscow); Chuyko, S. V. (Moscow)

TITLE: Transition to detonation during normal burning of porous explosives at slightly increasing pressure

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 4, 1963, 99-101

TOPIC TAGS: solid explosive, secondary explosive, combustion, deflagration-detonation transition, hexogen, solid-propellant detonation

ABSTRACT: Experiments have shown that the pores on the burning surface of melting secondary explosives are covered by the melt only at comparatively low pressures. When the pressure reaches a critical value (P_*), the surface of the melt is disrupted and intermediate gaseous combustion products from the dark zone penetrate into the pores, where they cause thermal decomposition of the explosive. After an induction period the intermediate products enriched by the thermal decomposition products undergo self-ignition followed by detonation.

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Flames inside the pores are not observed when the pore walls are coated with an inert material. Experiments with pressed hexogen of 160—250-μ particle size and 0.7 density were conducted in a manometric bomb equipped with high- and low-speed photoregisters and with piezoelectric pressure pickups for recording the pressure in the bomb and in the pores. The pressure P_* can be calculated by the formula

$$P_*^n \leqslant \frac{12\delta\chi(\rho - \rho_*)}{(1 - \delta)D\rho},$$

where ρ_* is the density of the melt, ρ is the density of the solid explosive, χ is the thickness of the molten layer at 1 atm, and D is the particle diameter; P_* was about 3 atm for the hexogen tested. A plot of detonation pressure (P) versus the pressure-increase rate obtained with hexogen specimens 40 mm high and 8 mm in diameter showed that the characteristic time constant, the time required for development of self-ignition, is about 0.7 sec. Four combustion regimes (normal, convective, explosive, and detonative) are defined by inequalities in terms of the rate of gas penetration into the pores and the

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ACCESSION NR: AP3006130

2

flow velocity of the combustion products. "The authors thank I. A. Karpukhin and G. A. Afanas'yev for evaluating certain problems." Orig. art. has: 5 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 18Mar63 DATE ACQ: 11Sep63 ENCL: 00

SUB CODE: AS, FL NO REF SOV: 002 OTHER: 003

Card 3/3

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

AFANAS'YEV, G.T.; BOBOLEV, V.K.; KARPUKHIN, I.A.

Sensitivity of an explosive to mechanical effects and methods of phlegmatization. Vzryv. delo no.52/9:5-10 '63.
(MIRA 17:12)

1. Institut khimicheskoy fiziki AN SSSR.

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EPA/EPF(c)/EWT(m)/BDS--AFFTC--Pe-4/Pr-4--BW/RM/WW/JW/JWD/H
L 10776-63
ACCESSION NR: AP3003522 S/0020/63/151/001/0155/0157

70

AUTHOR: Bobolev, V. K.; Karpukhin, I. A.

TITLE: Physicomathematical properties of eutectic mixtures of explosives

SOURCE: AN SSSR, Doklady, v. 151, no. 1, 1963, 155-157

TOPIC TAGS: explosives, TNT, tetryl, PETN, eutectic mixtures, impact strength, impact sensitivity, explosion temperature, melting point

ABSTRACT: The use of eutectic mixtures of explosives to lower the sensitivity of the components to mechanical action has been investigated. On the basis of theoretical computations and the results of previous studies, it was postulated that widening the interval between the explosion temperature and melting point of an explosive by formation of a eutectic mixture would lower sensitivity to mechanical action. This postulate was tested experimentally by determining the impact strength and impact sensitivity of TNT-tetryl and PETN-tetryl mixtures for the entire range of compositions. It was found that, as in the case

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ACCESSION NR: AP3003522

of individual explosives, the dependence of impact strength on melting point is described by the equation, $\sigma = kT_m$, where $k = 5.2$ kg/cm^{2}·°C, σ is the impact strength, and T_m is the melting point. To determine the relationship between physicomechanical properties and impact sensitivity, explosion-frequency tests were conducted. A 66/34 TNT-tetryl eutectic mixture melting at 68.8C exploded in 8% of the cases; a 67.5/32.5 PETN-tetryl mixture melting at 104C, in 24%. In contrast, a PETN-tetryl mechanical mixture in the same ratio as the eutectic exploded in 60% of the cases. It was concluded that the sensitivity of explosives to mechanical action can be lowered by preparing eutectic mixtures. It is also suggested that the development of multicomponent eutectic systems will lower this sensitivity still further by sharply changing the physicomechanical properties. Orig. art. has: 2 figures, 3 formulas, and 1 table.

ASSOCIATION: none

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

L 13332-63 EPA/EPR/EPF(c)/ENT(m)/BDS/ES(s)-2 AEDC/AFFTC/APGC/
RPL/SSD Paa-4/Ps-4/Pr-4/Pt-4 RM/WW/EW-2/JW/JFW/JWD/H
ACCESSION NR: AP3003856 S/0020/63/151/003/0604/0607

90
88

AUTHOR: Bobolev, V. K.; Glazkova, A. P.; Zenin, A. A.; Leypunskiy, O. I.

TITLE: Temperature profile in ammonium perchlorate combustion

SOURCE: AN SSSR. Doklady*, v. 151, no. 3, 1963, 604-607

TOPIC TAGS: ammonium perchlorate, temperature profile, flame temperature, surface temperature, condensed phase, gas phase, pressure effect, burning rate, heat release, heat barrier, heat flow, diffusion, combustion product, catalyst, ammonium perchlorate burning rate, ammonium perchlorate flame temperature, ammonium perchlorate combustion

ABSTRACT: The anomalous combustion pattern of ammonium perchlorate at pressures above 150 atm has prompted a study of the temperature profile of the condensed and gas phases in the combustion process. Flame-temperature measurements were carried out by the method of thin thermocouples developed by A. A. Zenin. Compacted samples of ammonium perchlorate were held at a constant pressure within the 30--350-atm range in a nitrogen atmosphere. Simultaneous photorecording of the burning rate and combustion pattern and oscillographic recording of temperature were provided. The recorded oscillograms and derived temperature profiles

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showed two distinct combustion patterns: a stable one within 40—150 atm and an unstable one within the 160--350 atm. The region of unstable combustion was characterized by temperature fluctuations with a high (up to 500C) amplitude in the gas phase, followed by a leveling off of temperature at about 2700C, which was assumed to be also the temperature at the surface. The surface temperature (T_s) was determined either indirectly from the maximum heat release in the condensed phase or directly by a method proposed by P. F. Pokhil (Sborn. Fizika vzry*va, no. 4, 1955 and no. 2, 1956). The increase in overall heat release with increasing pressure observed within the region of stable combustion was attributed in part to a simultaneous increase in heat release in the gas phase and in part to a change in the mechanism of chemical reactions. The heat release in the condensed phase, and hence T_s, decreased with increasing pressure and approached the temperature of phase transition within the range of unstable combustion. The existence of a heat barrier (80 cal/g) between the two combustion regions was determined from the identity of the experimental heat release at 150 atm in the condensed phase and the calculated amount of heat required to bring the condensed phase to 270C. Heat absorption in the phase transition might be responsible for the decrease in burning rate which leads to flame extinction. The surface temperature in the 50—150 atm pressure range was found

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ACCESSION NR: AP3003856

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to be relatively low (300—430C), which indicates a heat flow and hence diffusion of molecules and free radicals from the flame zone towards the surface. Activated combustion products are assumed to act as catalysts of thermal decomposition on the perchlorate surface. The assumption is extended to the combustion of any condensed system in which heat flows from the gaseous reaction zone toward the surface. The article was presented by Academician Ya. B. Zel'dovich on 9 April 1963. Orig. art. has: 4 figures.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR)

SUBMITTED: 31Mar63 DATE ACQ: 15Aug63 ENCL: 00

SUB CODE: CH NO REF SOV: 006 OTHER: 004

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

ACCESSION NR: AP4041206 S/0207/64/000/003/0153/0158

AUTHORS: Bobolev, V. K. (Moscow); Glazkova, A. P. (Moscow); Zenin, A. A. (Moscow); Leypunskiy, O. I. (Moscow)

TITLE: A study of the temperature distribution in the combustion of ammonium perchlorate

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1964, 153-158

TOPIC TAGS: temperature distribution, combustion rate, pressure effect, flame temperature, grain effect, phase change, decomposition, point thermocouple, sublimation, condensation, combustion stability, heat liberation, oscillograph H 700

ABSTRACT: Studies of the combustion of preheated ammonium perchlorate at below-atmospheric pressure show that the combustion rate is limited by the equilibrium endothermic decomposition of NH_4ClO_4 to NH_3, and $HClO_4$. A zone combustion treatment of burning indicated, however, that the decomposition was exothermic. The point thermocouple method, developed by A. A. Zenin (Izucheniye raspredeleniya temperatury* pri gorenii kondensirovanny*kh veshchestv. Dissertatsiya, Moscow, 1962) was used in this paper to study the temperature distribution of

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ACCESSION NR: AP4041206

ammonium perchlorate combustion. Two p-type thermocouples, W+Re (5 and 20%Re) with diameters of 15 and 30 μ and a thickness of 3.5 and 7 μ respectively, were used. The 7-mm samples of unfiltered perchlorate (pressed to a density of 1.93-1.94g/cm^3) were treated over the pressure range 40-350 atmos of nitrogen. The thermocouples were impressed in the samples at a pressure of 3000-3500 kg/cm^2. Maintaining the pressure for 15-20 minutes produced transparent samples. The temperature distribution was recorded on a loop oscillograph H-700, and the speed and character of combustion were photographed. It was discovered that at the end of combustion there was a temperature fluctuation (50 msec and 500-1000C). The flame temperature fluctuation and plateau agreed well with the decreased brightness in the photographs, but complete examination of the oscillogram for unstable burning was not possible. This would require more precise recording of the fluctuation of the burning rate (perhaps with high-speed motion pictures). In some cases the burning was extinguished. Temperature profiles were obtained from 40-350 atm, which showed the presence of 2 combustion schemes for ammonium perchlorate, stable (40-150 atm) and unstable (160-350 atm). Abnormalities were discovered in the relation of the surface temperature and heat liberation (in the condensation phase) to the pressure. Assumptions were made concerning; 1)the variation of the ammonium perchlorate combustion mechanism with the growth of pressure; 2) the qualitative effect of the products passing from the reaction

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ACCESSION NR: AP4041206

zone in the gas phase to the surface by gasification of the condensation phase. An hypothesis was proposed concerning the reason for the decrease in the ammonium perchlorate combustion rate with an increase in pressure above 150 atm. An important discrepancy was established between the kinetic thermal decomposition and the kinetic gasification of perchlorate with combustion. Orig. art. has: 6 figures.

ASSOCIATION: none

SUBMITTED: 15Apr63

ENCL: 00

SUB CODE: GC

NO REF SOV: 004

OTHER: 005

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APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOLEV, V. K.; CHUYKO, S. V.

"The combustion of porous systems under slowly changing pressure conditions."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Inst of Chemical Physics, AS USSR.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

ACC NR: AP5026025 JWD/WE/RM SOURCE CODE: UR/0405/65/000/001/0044/0051

AUTHOR: Bobolev, V. K. (Moscow); Karpukhin, I. A. (Moscow); Chuyko, S. V. (Moscow)

ORG: none

TITLE: Combustion of porous explosive charges

SOURCE: Nauchno-tekhnicheskiye problemy goreniya i vzryva, no. 1, 1965, 44-51

TOPIC TAGS: detonation deflagration transition, solid propellant, explosion, combustion, combustion instability

ABSTRACT: Previous experiments have shown that the transition from deflagration to detonation in porous propellants is connected with an unbalanced formation and removal of gas from the pores. The transition from deflagration to detonation in hexogen charges of 50—360 μ particle size, with and without the addition of paraffin wax, has been studied by pressure recordings and high-speed photography. Normal combustion took place under constant pressure for about 3 sec, then the burning velocity increased, and gradual transition to a perturbed combustion regime occurred, characterized by luminosity pulsations. The lengths of the periods of low luminosity increased with increasing particle size. The following mechanism is proposed. Normal combustion takes place only when the hot gases penetrating into the pores do not heat the grain to the gasification temperature to a depth exceeding that of the thermal layer. If this depth is exceeded, transition takes place. Paraffin wax acts as a

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Pr-4/Ps-4/Pt-7 RPL RM/WW/JWD

ACCESSION NR: AP5013385 UR/0207/65/000/002/0150/0151

AUTHOR: Bobolev, V. K. (Moscow); Dubovik, A. V. (Moscow)

TITLE: Low-velocity propagation of an explosion in solid explosives

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 2, 1965, 150-151

TOPIC TAGS: low velocity detonation, solid explosive, detonation propagation, PETN, hexogen, Dina, tetryl

ABSTRACT: In order to study the detonation propagation in thin layers of secondary explosives under pressure, specimens (~ 1 mm thick and 50 mm in diameter) of various solid explosives were compressed (to a pressure of 1200—1500 kg/cm^2) between a metal and a Plexiglas cylinder and detonated with a hot (1000°) wire. The detonation propagation was registered through the Plexiglas cylinder by high-speed photography. Under these conditions, the detonation starts as a slow burning at the point of contact with the hot wire. Then, due to the increased pressure behind the flame front (resulting from the expanded volume of the reaction products), the burning propagates rapidly in the radial direction. Owing to the increased velocity, the flame deflects, and this leads to a rapid expansion of the burning zone. The increased pressure of the combustion products between the cylinders creates a compression wave which propagates in front of the flame with the speed of sound. A

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ACCESSION NR: AP5013385

weak detonation wave, which forms behind the compression wave, initiates (on certain nonuniformities) intense reactions which proceed according to the explosion mechanism. The detonation process stabilizes after reaching a certain speed. Under these conditions, the following detonation velocities were observed for the explosives tested: 700—800, 700, 550, and 300 m/sec for PETN, "hexogen", Dina, "and tetryl", respectively. The detonation pressures for PETN and hexogen were calculated as 3800 and 3000 atm, respectively. The reaction zone, under the conditions studied, markedly exceeds that of normal detonation, which leads to considerable loss of energy. The low-velocity detonation is determined by the balance between the heat liberated and the heat losses. Orig. art. has: 3 figures and 1 table. [PS]

ASSOCIATION: none

SUBMITTED: 06Mar64 ENCL: 00

NO REF SOV: 000 OTHER: 002

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EWA(d)/EWA(1) Pc-4/Pr-4/Ps-4/Pt-7/Pl-4/Paa-4 RPL RM/WW/JWD

ACCESSION NR: AP5011541 UR/0020/65/161/005/1152/1155

AUTHOR: Voskoboynikov, I. M.; Dubovik, A. V.; Bobolev, V. K.

TITLE: Low-velocity detonation of nitroglycerin

SOURCE: AN SSSR. Doklady, v. 161, no. 5, 1965, 1152-1155

TOPIC TAGS: detonation, nitroglycerin, low velocity detonation, detonation mechanism, detonation stability

ABSTRACT: Photographic studies of the low-velocity detonation (D = 800—1000 and 2000 m/sec) of nitroglycerin in charges with cylindrical, square, and triangular cross sections were conducted to establish the mechanism of the low-velocity detonation of nitroglycerin. The results showed that the stable detonation and the slow propagation of the detonation wave may be attributed to the existance of a shock wave which is formed during the detonation initiation with a weak impulse and which propagates in the shell with a much higher velocity (1500—2000 m/sec) than the detonation wave (800—1000 m/sec). The shock wave propagation in front of the detonation wave causes discontinuities (holes and gas bubbles) in the charge. The discontinuities decreased the sound velocity in nitroglycerin to a value of 700 m/sec. Thus the mechanism of the low-velocity detonation of nitroglycerin is similar to that of solid explosives. Orig. art. has: 4 figures.

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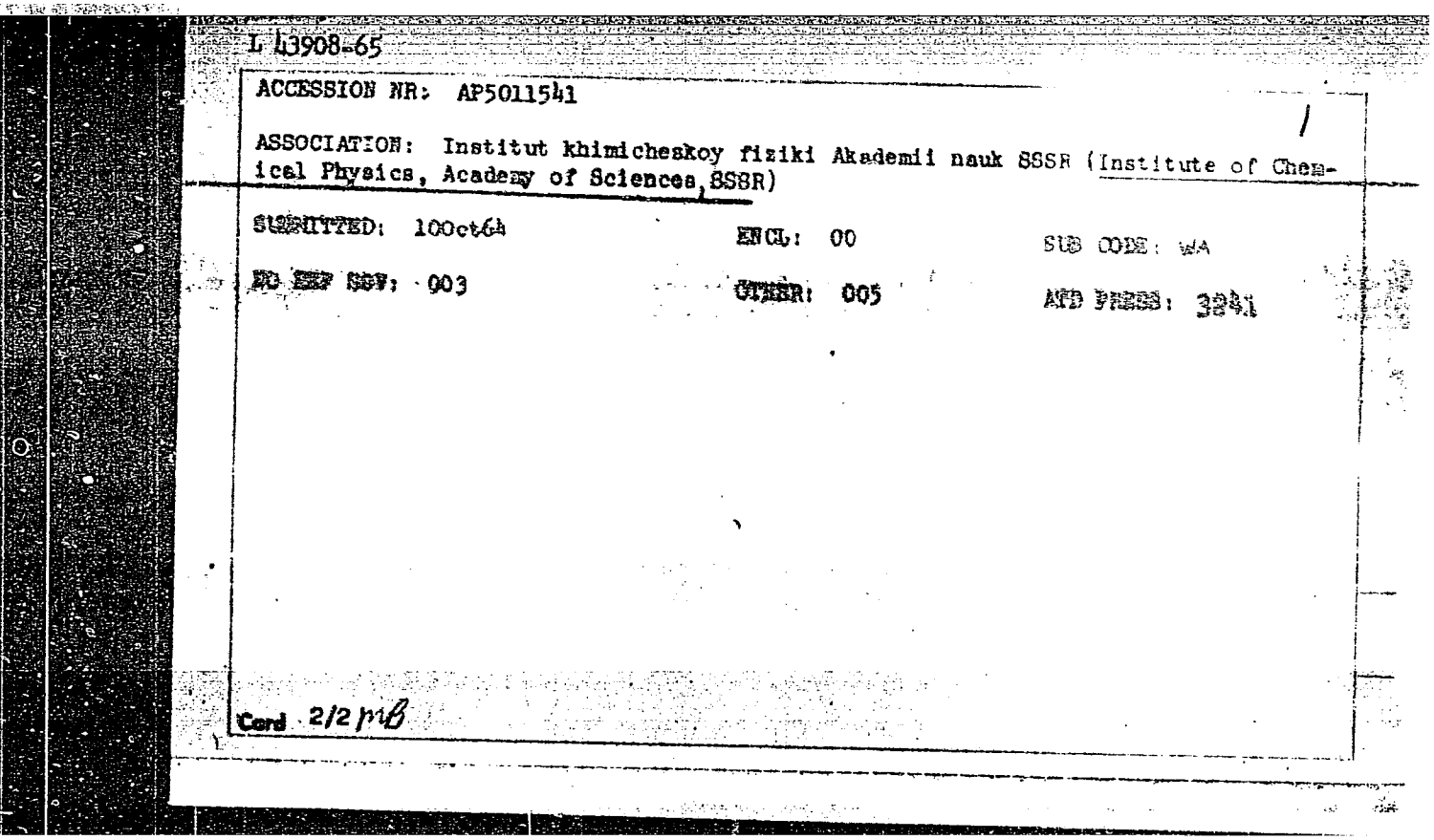

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ACCESSION NR: AP5011541

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences, SSSR)

SUBMITTED: 10Oct64 ENCL: 00 SUB CODE: MA

NO REF SOV: 003 OTHER: 005 ATD PRESS: 3241

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Pt-7 RPL WW/JW/JWD/RM

ACCESSION NR: AP5013760 UR/0020/65/162/002/0388/0391

AUTHOR: Bobolev, V. K.; Margolin, A. D.; Chuyko, S. V.

TITLE: Mechanism of the penetration of combustion products into pores of explosive charges

SOURCE: AN SSSR. Doklady, v. 162, no. 2, 1965, 388-391

TOPIC TAGS: explosive combustion product, pore penetration mechanism, forced penetration, spontaneous penetration, hexogen

ABSTRACT: The following two mechanisms of the penetration of combustion products into the pores of an explosive charge are postulated and experimentally substantiated: 1) forced penetration, which depends on the outer pressure far from the burning surface and which is not connected with the combustion process and occurs with increasing outer pressure; and 2) spontaneous penetration, which is connected directly with the combustion process and occurs under the conditions of unsteady burning near the charge surface, which is attributed to surface and gas-flow nonuniformities. The forced penetration takes place when the velocity of the penetrating gas (v_g) with respect to the pores is higher than the linear burning velocity (u),

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ACCESSION NR: AP5013760

$v_g - u > 0$. For the case when the gas pressure (P) over a pore increases with a velocity dP/dt,

$$v_g = \frac{H_0 dP}{P dt} \frac{T_g}{T_0},$$

where H_0 is the height of the pore, T_0 is temperature of the pore wall far from the inlet, and T_g is the temperature of the penetrating gas. Under decreasing pressures the combustion gases penetrate the pore by the spontaneous mechanism. The theory was verified by experiments with a model pore, a gap (40 mm long and about 0.1 mm wide) between a hexogen charge and a plexiglass plate. The charge was burned in a bomb under controlled nitrogen pressure. The pressure change was registered on an oscillograph, and the combustion process was registered by high-speed photography through the plexiglass plate. The combustion gases penetrated the pore when the initial pressure in the bomb exceeded about 25 atm. The penetration rate increased with pressure. A detailed analysis of the experimental data is given. Orig. art. has: 2 tables and 2 figures. [PS]

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences, SSSR)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

L 46782-66 EWT(1)/EWP(m)/EWT(m)/EWP(j)/T RM/WW/JW/JWD/GD

ACC NR: AT6032003 SOURCE CODE: UR/0000/66/000/000/0273/0278

AUTHOR: Bobolev, V. K.; Karpukhin, I. A.; Chuyko, S. V.

68 BH1

ORG: Institute of Chemical Physics, AN SSSR (Institut khimicheskoy fiziki AN SSSR)

TITLE: Perturbation of the normal combustion regime of porous explosive charges

SOURCE: Teplo- i massoperenos, t. 4: Teplo- i massoobmen pri khimicheskikh prevrashcheniyakh v tekhnologii (Heat and mass transfer, v. 4: Heat and mass transfer during chemical transformations). Minsk, Nauka i tekhnika, 1966, 273-278

TOPIC TAGS: combustion, solid propellant combustion, solid propellant, combustion instability, deflagration to detonation transition, DEFLAGRATION, DETONATION, EXPLOSIVE CHARGE

ABSTRACT: The development of combustion instability and the deflagration-to-detonation transition was studied in a constant volume bomb by pressure recording and high speed photography. The hexogen samples were compacted into plexiglass cases and ignited by an electric wire or a powder charge. The results showed that the deflagration-to-detonation transition under increasing pressure takes place according to the following order: normal combustion; perturbed combustion; ejection of particles into the flame zone, which is accompanied by interruption of luminosity; accelerated combustion of the ejected particles, which generates a pressure increase above the burning surface; and gas penetration into the pores, which leads, in case of a pure explosive, to a detonation and, in case of an explosive phlegmatized with

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L 46782-66

ACC NR: AT6032003

paraffin wax, to accelerated combustion of the charge. Phlegmatization of the charge decelerates the development of this process and eliminates the deflagration-to-detonation transition. A new type of deflagration-to-detonation transition was found which is caused by the self-ignition of semiproducts and gases in the pores of the charge. Orig. art. has: 5 figures. [PV]

SUB CODE: 21/ SUBM DATE: 25Apr66/ ORIG REF: 004/ OTH REF: 004/ ATD PRESS: 5090

Card 2/2 hs

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

PAWLOWSKA, Hanna; OBLICKA, Maria; BOBOLI, Karol

Control of the Fe_2O_3, TiO_2, and Al_2O_3 content in spectrographic standard specimens of glazier sands. Chem anal 7 no.2:487-494 '62

1. Instytut Przemyslu Szkla i Ceramiki, Warszawa, Centralne Laboratorium Aparatow Pomiarowych i Optyki, Warszawa.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOLI, K., inz.

Filters made of plastics. Pomiary 8 no.3:145 Mr '62.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

POLAND

BOBOLI, Karol, mgr.; CZAKON, Julian, dr.

Institute of Nuclear Research (Instytut Badan Jadrowych), Warsaw, (for both).

Warsaw, Chemia analityczna, No 4, July-August 1965, pp 595-602.

"Studies on the time evolution of excitation of some Ce, La, V, Ag, and Cu spectral lines by the method of time-resolved spectroscopy."

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOLOCU, S., corespondent

The delivery taking role. Constr Buc 15 no.688:3 16 Mr '63.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOLOVICH, B.

Swedish power plant reactor near Stockholm. Atom. energ. 9 no.6:519-520 D '60. (MIRA 13:12)
(Stockholm--Nuclear reactors)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOLOVICH, V.

Radiocontamination in the EBWR reactor. Atom. energ. 11 no.1: 87-88 Jl '61. (MIRA 14:7)
(Radioactive waste disposal)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOLOVICH, V.

Use of carbon steel in the NPR reactor. Atom. energ. 11 no.3: 277-279 S '61. (MIRA 14:9)
(Hanford, Wash.--Nuclear reactors)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOLYUBOV, B.P.; GRACHEV, F.G.

Minimum thickness of separately recovered ore inclusions in composite rock face workings. Izv.vys.ucheb.zav.; tsvet.met. no.5:8-17 '58. (MIRA 12:1)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra sistem razrabotki rudnykh i rossypnykh mestorozhdeniy.
(Strip mining) (Excavating machinery)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOMOLOVA, F.A.

Rheumatism

Clinical peculiarities of intermission peridds in rheumatism in children
Uch. zap. Vt. mosk. med. inst., 1, 1951

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

L 41059-66 EWT(l)/EWP(e)/T /EWP(t)/ETI IJP(c) WG/JD/GG/WH/JG

ACC NR: AP6027762 SOURCE CODE: GE/0030/66/016/002/K165/K166

AUTHOR: Bobomolova, G. A.; Kaminskii, A. A.; Timofeeva, V. A.

50
B

ORG: Institute of Crystallography, Academy of Sciences USSR

TITLE: Optical centers in $Y_3Al_5O_{12}:Nd^{3+}$ crystals

SOURCE: Physica status solidi, v. 16, no. 2, 1966, K165-K166

TOPIC TAGS: laser r and d, paramagnetic laser, rare earth element, garnet, optical center, neodymium laser

ABSTRACT: Preliminary results are reported on investigation of Nd^{3+} optical centers in $Y_3Al_5O_{12}$ crystals grown at the Institute of Crystallography. The crystal specimens had an Nd^{3+} concentration from 0.2 to 12 wt%. The investigations of their absorption spectra were carried out at 300K in the 0.2—2.5 μm range using an SP-700 spectrophotometer. The most convenient groups of lines were selected for further detailed investigation ($^4D_{3/2}$ —3628 Å, $^2P_{3/2}$—3849 Å, $^2D_{5/2}$—4224 Å, $^2P_{1/2}$—4318 Å, $^4F_{3/2}$—8685, 8750, 8752, 8760, and 8862 Å). The absorption in these groups was recorded at 77K using a DFS-12 diffraction spectrometer with a resolution of 0.1 Å. Sb-Cs and O-Cs photocathodes were used as optical detectors. The crystal were mounted between two quartz light pipes and directly plunged into liquid nitrogen.

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ACC NR: AP6027762

Fig. 1 represents an analysis of the $Y_3Al_5O_{12}:Nd^{3+}$ absorption spectra. A comparison of the curves shows clearly that they can be divided into three systems, designated

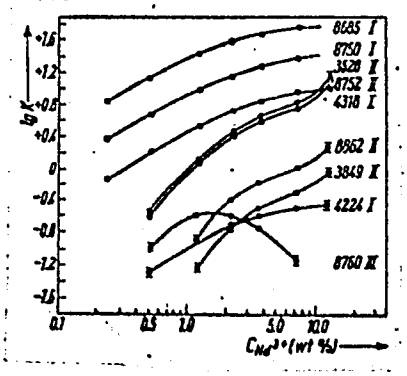

Fig. 1. Absorption coefficients at λ_{max} for lines of the $^4D_{3/2}$, $^2P_{3/2}$, $^2D_{5/2}$, $^2P_{1/2}$, and $^4F_{3/2}$ groups

I, II, and III in the figure. Each of these is a family of parallel curves which belong to optical centers with different structures. Orig. art. has: 1 figure. [YK]

SUB CODE: 20/ SUBM DATE: 06Jul66/ ORIG REF: 005/ OTH REF: 003/ ATD PRESS: 5052

Card 2/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

SHUSTOVA, I.F., assistent; VITKOVSKAYA, M.E., ordinator; BOBOMOLOVA, N.N., vrach gorodskoy epidstantsii

Further observations on the treatment of dysentery in adults with furacilin and late results of an epidemiological investigation. Sbor. trud. Kursk. gos. med. inst. no.13:216-218 '58. (MIRA 14:3)

1. Iz kliniki infektsionnykh bolezney (zav. - dotsent M.Ye. Gal'perin) Kurskogo gosudarstvennogo meditsinskogo instituta.
(DYSENTERY) (FURACILIN)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOREKO, E.A.

ANDREYEV, K.P.; BOBOREKO, E.A.; IGNAT'YEV, I.S.; ZELENSHCHIKOV, A.V.; BELYAYEVSKIY, I.A.; SHIRYAYEV, A.M.; SAPIRO, M.M.

Steam injection cooling of stillage. Gidroliz. i lesokhim. prom. 10 no.7:30-32 '57. (MIRA 10:12)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut gidrolizhoy i sul'fitnospirtovoy promyshlennosti (for Andreyev, Boboreko, Ignat'yeva, Zelenshchikova). 2.Leningradskiy gidrolizhyy zavod (for Belyayevskiy, Shiryayev, Sapiro).
(Alcohol)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORENKO, E.A.

Investigating the flotation method for yeast separation. Gidroliz. i lesokhim.prom. 16 no.3:7-8 '63. (MIRA 16:5)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut gidroliznoy sul'fitnospirtovoy promyshlennosti.
(Yeast) (Wood--Chemistry)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOREKO, E.A.; KALYUZHNYY, M.Ya.; CHAYKA, N.D.; ABRAMOVICH, M.M.; SHILOV, Yu.P.; DRUZHININA, A.T.; ZYBIN, S.Ye. [deceased]; BATIKOV, L.S.

Improving the process of yeast growing on wood hydrolyzates. Gidroliz. i lesokhim.prom. 17 no.8:22-25 '64.

(MIRA 18:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut gidroliznoy i sul'fitno-spirtovoy promyshlennosti, Leningrad (for Boboreko, Kalyuznyy, Chayka, Abramovich). 2. Ivdel'skiy gidroliznyy zavod (for Shilov, Druzhinina, Zybin, Batikov).

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

KOROL'KOV, I.I.; LIKHONOS, Ye.F.; BOBOREKO, E.A.; DRUBLYANETS, E.E.; KARDASH, F.G.; NORINA, A.Ye.

Industrial testing of the technology of yeast propagation on inverted hydrolyzates. Gidroliz. i lesokhim. prom. 18 no.5:4-6 '65. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznoy i sul'fitno-spirtovoy promyshlennosti (for Korol'kov, Likhonos, Boboreko, Drublyanets). 2. Tavdinskiy gidroliznyy zavod (for Kardash, Norina).

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

KALYUZHNYY, M.Ya.; BOBORENKO, E.A.

Batcher for feeding nutrient medium in a continuous cultivation of fodder yeast. Prikl. biokhim. i mikrobiol. 1 no.5:590-594 S-O '65. (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sul'fatno-spirtovoy i gidrolizhnoy promyshlennosti.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

SHKUTKO, N.V.; CHAKHOVSKIY, A.A.; BOBOREKO, Ye.Z.

Effect of the drought of 1959 on trees and shrubs at the Central Botanical Garden of the Academy of Sciences of the White Russian S.S.R. Sbor. nauch. rab. TSBS no.1:37-41 '60.
(MIRA 14:10)
(Minsk—Plants, Effect of aridity on)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOREKO, Ye.Z.

Second flowering of some trees in 1959. Sbor. bot. rab. Bel. otd. rab. Bel. otd. VBO no.2:173-177 '60. (MIRA 15:1)
(White Russia—Plants, Flowering of)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOREKO, Ye.Z.

Secondary growth of some exotic coniferous plants. Sbor. nauch. rab. TSBS no.2:194-197 '61. (MIRA 15:7)
(Minsk—Coniferae)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOREKO, Ye.Z.

Culture of the yew (Taxus baccata L.) in the Botanical Garden of the Academy of Sciences of the White Russian S.S.R. Sbor. nauch. rab. Bel. otd. VBO no.3:158-161 '61. (MIRA 14:12)
(Minsk—Yew)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOREKO, Ye.Z.

Cultivation of witch hazel in White Russia. Bot.; issl. Bel. otd. VBO no.6:222-227 '64. (MIRA 18:7)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORELO, Ye.Z. [Baborelo, E.Z.]

Carotene and ascorbic acid content in fruits of some hawthorn species. Vestsi AN BSSR, Ser. biial. nav. no.4:42-45 '64.
(MIRA 18:12)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORITSKIY, F.M.; MISHLE, P.P.; BURTSEV, A.P.

Discussion of the article "Ways of mechanizing line work". Avtom., telem. i sviaz' no.3:40 Mr '57. (MLRA 10:4)

1. Nachal'nik otdela slushby signalizatsii i svyazi Yugo-Zapadnoy dorogi (for Boboritskiy). 2. Elektromekhanik Moskovskoy distantsii signalizatsii i svyazi Moskovsko-Kursko-Donbasskoy dorigi (Mishle). 3. Starshiy inzhener Moskovsko-Smolenskoy distantsii signalizatsii i svyazi Kalininskoy dorogi (for Burtsev).
(Electric lines)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORITSKIY, F.M.

BARTNOVSKIY, A.L.; BOBORITSKIY, F.M.; KOZIN, V.O.; LASTOVSKIY, M.S.; SHLIVANETS, N.Ye.; STROGANOV, L.P., inzh., red.; VERINA, G.P., tekhn. red.

[Communications in transportation] Transportnaia sviaz'. Moskva, Gos. transp. zhel-dor. izd-vo, 1958. 255 p. (MIRA 11:7)
(Railroads--Communication systems)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

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623.53
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BOBOROV, Veniamin Grigor'yevich

Zhizh' morya (Life of the sea) Moskva, Molodaya Gvardiya, 1954.
299 p. illus., maps.
"Chto chitat' o zhizni morya": p (301)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBOROVA, G.K.

SAVCHENKO, D.S.; NAZARCHUK, A.P., kandidat sel'skokhozyaystvennykh nauk; BOBOROVA, G.K., redaktor; TISHEVSKIY, I.I., tekhnicheskiy redaktor

[Raising 48.6 centers of millet per hectare] 48,6 tsentnera prosa s gektora. [Moskva, Izd-vo Ministerstva sel'skogo khoziaistva SSSR, 1956] folder (4 p.)
(Millet) (MLRA 10:1)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORY, J.

Bilirubin conversion into an new experimental product. Orv. hetil. 94 no.21:579-581 24 May 1953. (CIML 25:1)

1. Doctor. 2. Second Internal Clinic (Director -- Prof. Dr. Gyula Petranyi), Debrecen Medical University.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORY, J.

EXCERPTA MEDICA Sec.2 Vol.9/10 Physiology,etc. Oct56

4807. BOBORY J. and VINCZE L. Debreceni Orvostudományi Egyetem II sz. Belgyógyászati Klin., Közleménye. *Prostigmin hatása a sérum bilirubinra. Effect of neostigmine on the serum bilirubin MAG. BELORV. ARCH. 1955, 8/4 (125-127) Graphs 1 Tables 1

Neostigmine causes a transient fall in the high serum bilirubin of patients with infectious hepatitis. This effect differs from that of ACh. In progressive hepatitis the lowering of serum bilirubin does not influence the course of the illness. The administration of neostigmine in some stationary cases might have an adjuvant value.

Gyermek - Budapest

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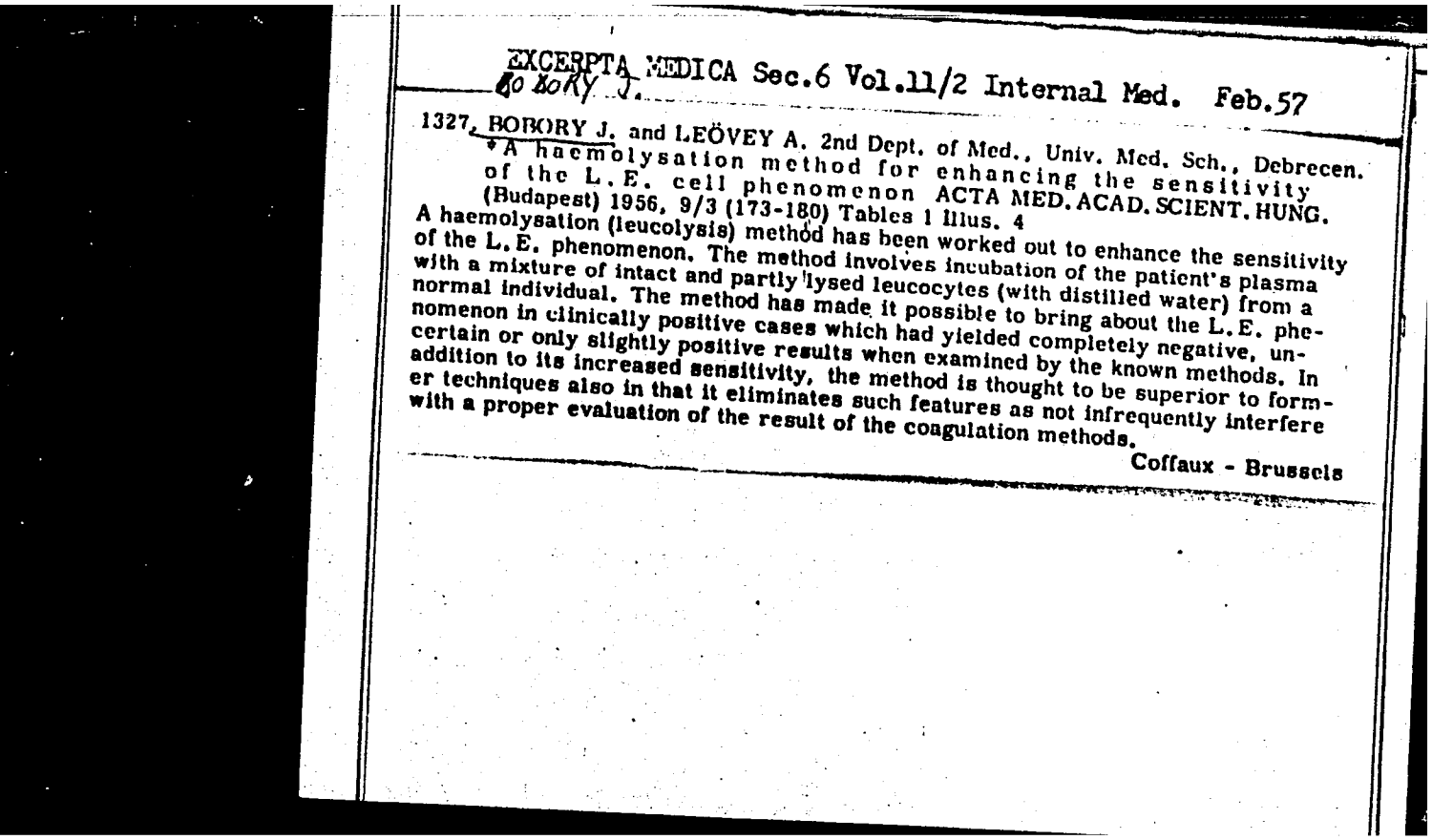
"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5



EXCERPTA MEDICA Sec.6 Vol.11/2 Internal Med. Feb.57

BOBORY J.

1327. BOBORY J. and LEÖVEY A. 2nd Dept. of Med., Univ. Med. Sch., Debrecen.
*A haemolysation method for enhancing the sensitivity of the L.E. cell phenomenon ACTA MED. ACAD. SCIENT. HUNG. (Budapest) 1956, 9/3 (173-180) Tables 1 Illus. 4

A haemolysation (leucolysis) method has been worked out to enhance the sensitivity of the L.E. phenomenon. The method involves incubation of the patient's plasma with a mixture of intact and partly lysed leucocytes (with distilled water) from a normal individual. The method has made it possible to bring about the L.E. phenomenon in clinically positive cases which had yielded completely negative, uncertain or only slightly positive results when examined by the known methods. In addition to its increased sensitivity, the method is thought to be superior to former techniques also in that it eliminates such features as not infrequently interfere with a proper evaluation of the result of the coagulation methods.

Coffaux - Brussels

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORY, Julia

New method in the laboratory diagnosis of pancreatites. Orv. hetil. 98 no.46:1274-1275 17 Nov 57.

1. A Debreceni Orvostudomanyi Egyetem II. sz. Belklinikajanak (igazgato: Petranyi Gyula dr.) kozlemenye.

(PANCREATITIS, diag.
uric acid determ. in urine by zinc sulfate reaction (Hun))
(URIC ACID, in urine
determ. by zinc sulfate, diag. value in pancreatitis (Hun))

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORY, Julia, Dr.; PETRANYI, Gyula, Dr.

Practical significance of the lupus erythematosus phenomenon. Orv. hetil. 99 no.14:460-465 6 Apr 58.

1. A Debreceni Orvostudomanyi Egyetem II. sz. Belklinikajanak (igazgato: Petranyi Gyula dr. egyet. tanar) kozlemenye.
(LUPUS ERYTHEMATOSUS, DISSEMINATED
L.E. phenomenon, incidence & diag. value (Hun))

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORY, Julia dr.

Experiences with Nile blue test in the diagnosis of fat absorption disorders. Orv.hetil. 101 no.9:314-315 F '60.

1. Debreceni Orvostudomanyi Egyetem, II. sz. Belklinika.
(SPRUE diag)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORY, Julia; PETRANYI, Gyula

Intravenous benzene intoxication after ganglionic blockade.
Kiserl. orvostud. 13 no.5:449-450 O '61.

1. Debreceni Orvostudomanyi Egyetem II. sz. Belklinikaja.
(AUTONOMIC DRUGS pharmacol.) (PETROLEUM toxicol.)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORY, Julia, dr.; ASZTALO, Miklos

The incidence of hepatitis among medical workers. Magy belorv. arch. 14 no.1:1-2 '61.

1. A Debreceni Orvostudomanyi Egyetem II sz. Belklinikajanak (Igazgato: Dr. Petranyi Gyula) kozlemenye.

(HEPATITIS INFECTIOUS statist)
(JAUNDICE HOMOLOGOUS SERUM statist)

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BOBORY, Julia, dr.

Hyperbilirubinemia of patho-enzymatic origin. Orv.hetil. 102 no.9:407-409 26 F '61.

1. Debreceni Orvostudomanyi Egyetem, II. sz. Belklinika.
(BILIRUBIN blood)
(TRANSFERASES)

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LEOVEY, Andras, dr.; NAGY, Gyorgy, dr.; BOBORY, Julia, dr.

An unusual manifestation of disseminated lupus erythematosus (acute LED syndrome). Orv. hetil. 102 no.29:1373-1376 16 Jl '61.

1. Debreceni Orvostudomanyi Egyetem, II Belklinika.

(LUPUS ERYTHEMATOSUS physiol)
(PURPURA THROMBOPENIC physiol)
(PNEUMONIA physiol)

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GROAK, Lajos, dr.; HAJDU, Bela, dr.; BOBORY, Julia, dr.

Simultaneous psoriasis and acute systemic lupus erythematosus.
Orv. hetil. 103 no.29:1369-1370 Jl '62.

1. Debreceni Nagyerdei Gyogyfurdo, Hajdu-Bihar megyei Tanacs Korhaz, I. Belosztaly es Debreceni Orvostudomnayi Egyetem, II. Belklinika.
(LUPUS ERYTHEMATOSUS case reports) (PSORIASIS case reports)

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HUNGARY

BOBORY, Julia, Dr, SZEGEDI, Gyula, Dr; Medical University of Debrecen, II. Medical Clinic (Debreceni Orvostudomanyi Egyetem, II. Belklinika).

"The Antinuclear Reaction."

Budapest, Orvosi Hetilap, Vol 104, No 24, 16 June 1963, pages 1123-1125.

Abstract: [Authors' Hungarian summary] The principle and methods of the antinuclear reaction are presented. The results of the investigations conducted by the authors are compared with data taken from the literature. The ANR (antinuclear reaction) test is valuable for the diagnosis of autoimmune (collagenotic) diseases. 4 Hungarian, 33 Western references.

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BOBORYKIN, K.K., polkovnik meditsinskoy sluzhby v otstavke

They conquered death. Voen.-med. zhur. no.3:8-9 '65.
(MIRA 18:11)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORYKIN, L. Ya.

"Stellar Clock".
Uch. zap. Kabardinsk. gos. ped. in-ta, No. 6, pp 33-35, 1955.

The design of equipment is suggested for studying the daily rotation of the sky and for approximative time determination. The position of the star Beta UMi is fixed by the equipment in relation to the Polar Star and the time is determined on the hour circle. (RZhAstr, No. 1, 1956)

SO: Sum No 884, 9 Apr 1956

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORYKIN, L.Ya.

Model of an atomic electric power station. Politekh. obuch. no.7:63-65 Jl '59. (MIRA 12:9)

1.Novozybkovskiy pedagogicheskiy institut Bryanskoy oblasti.
(Atomic power plants)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORYKIN, L. Ya.

Cross-section model of a hydraulic power station. Politekh. obuch. no.12:76-77 D '59. (MIRA 13:5)

1. Karachayevsko-Cherkesskiy pedagogicheskiy institut.
(Hydroelectric power stations--Models)

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BOBORYKIN, L.Ya. (g.Karachayevsk, Stavropol'skiy kray)

Model of an electric arc furnace for steel smelting. Khim.v shkole 18 no.2:72-74 Mr-Ap '63. (MIRA 16:4)
(Electric furnaces--Models)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORYKIN, L.Ya. (Karachayevsk)

Vasilii Ivanovich Popov. Fiz.v shkole 22 no.6:105 N-D '62.
(MIRA 16:2)

(Popov, Vasilii Ivanovich)
(Physics--Audio-visual aids)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205620010-5

BOBORYKIN, L.Ya. (Karachayevsk)

Apparatus for the demonstration of linear and angular velocities. Fiz. v shkole 23 no.5:70-71 S-O '63.
(MIRA 17:1)

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